

LISTING OF CLAIMS

1. (Currently Amended) A laminate which exhibits photocatalytic activity capable of decomposing triolein at a rate of $5 \mu\text{g}/\text{cm}^2/\text{day}$ or more when irradiating UV rays in UV-A range at a strength of $3 \text{ mW}/\text{cm}^2$ under an atmospheric temperature of 25°C and relative humidity of 70%, wherein the laminate comprises a metallic plate and a resin structure characterized in that the plate and the structure are obtainable laminating a photocatalyst-supporting film onto the surface of a metallic plate or a resin substrate by heat-pressing~~and are having photocatalytic activity capable of decomposing triolein at a rate of $5 \mu\text{g}/\text{cm}^2/\text{day}$ or more when irradiating UV rays in UV-A range at a strength of $3 \text{ mW}/\text{cm}^2$ under an atmospheric temperature of 25°C and relative humidity of 70%.~~

2. (Original Claim) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 1 characterized in that the photocatalyst-supporting film is made of polymer resin film in which a photocatalyst layer is carried on the film via an adhesive layer.

3. (Original Claim) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that the polymer resin film is a film on which 2 or more resin films are laminated.

4. (Currently Amended) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that the polymer resin film is made of a resin selected from ~~[[a]]the~~ group consisting of polycarbonate resins, copolymers of at least 2~~[or more of]~~ polymethylmethacrylate resins; copolymers of at least two ~~[or]~~ polyacrylate resins, copolymers of polymethylmethacrylate/polyacrylate resins, poly(vinyl chloride) resins and cellophane resins.

5. (Previously Presented) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that the thickness of the polymer resin film is in a range of from 5 to $200 \mu\text{m}$.

6. (Previously Presented) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that the adhesive layer is

formed by coating a coating solution for an adhesive layer containing a silane coupler as a hardener.

7. (Currently Amended) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that a coating solution for an adhesive layer prepared by adding a silane coupler in an amount of 0.1-5% by weight relative to the weight of the coating solution as a hardener, wherein the ~~to a~~ coating solution [composed of] comprises (1) or (2) wherein (1) is a silicon denaturated resin in an amount of 2-20% by weight which contains either polysiloxane in an amount of 10-50% by weight [[or]] and wherein (2) is a silicon denaturated resin in an amount of 2-20% by weight and contains colloidal silica in an amount of 5-30% by weight is used for the coating solution for [[an]]said adhesive layer.

8. (Original Claim) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 6 characterized in that a coating solution prepared by adding a silane coupler as a hardener in an amount of 0.1-5% by weight relative to the weight of the coating solution into a solution containing either monoalkyltrimethoxysilanes or its hydrolyzed product in an amount of 1-10% by weight and silica sol in an amount of 0.1-5% by weight is used as the coating solution for an adhesive layer.

9. (Previously Presented) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that the thickness of the adhesive layer is in a range of from 0.5 to 5 μm .

10. (Previously Presented) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that the photocatalyst layer contains a metal oxide sol in an amount of 1-10% by weight as solid component and titanium dioxide in an amount of 1-10% by weight as solid component.

11. (Previously Presented) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 2 characterized in that the photocatalyst layer contains silica sol in an amount of 1-10% by weight, either of monoalkyltrimethoxysilane or its hydrolyzed product in an amount of 1-10% by weight and titanium dioxide in an amount of 1-10% by weight.

12. (Previously Presented) The metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 10 characterized in that the thickness of the photocatalyst layer is in a range of from 0.1 to 5 μm .

13. (Currently Amended) The metallic plate laminated with a photocatalyst-supporting film according to Claim 1 characterized in that the metallic plate is a metallic plate selected from ~~[[a]]~~ the group consisting of iron plate, steel plate, aluminium plate and aluminium alloy plate.

14. (Currently Amended) The metallic plate laminated with a photocatalyst-supporting film according to Claim 1 characterized in that the metallic plate is any of resin-coated metallic plate, paint-coated metallic plate and enamelled metallic plate, which are coated in either single or multiple layers with ~~one or more~~ at least one of the resins selected from ~~[[a]]~~ the group consisting of poly(vinyl chloride) resins, polyethyleneterephthalate resins and polymethylmethacrylate resins.

15. (Previously Presented) The metallic plate laminated with a photocatalyst-supporting film according to Claim 1 characterized in that the shape of the metallic plate is ~~any~~ is selected from the group consisting of plate-form, tubular and corrugated-form.

16. (Previously Presented) The resin structure laminated with a photocatalyst-supporting film according to Claim 1 characterized in that the resin substrate is made of a resin selected from ~~[[a]]~~ the group consisting of poly(vinyl chloride) resins, polyethyleneterephthalate resins, polymethylmethacrylate resins, polycarbonate resins, polyethylene resins, polypropylene resins, shock-resistant denaturated polystyrene resins, and acryl-butadiene-styrene copolymers.

17. (Previously Presented) The resin structure laminated with a photocatalyst-supporting film according to Claim 1 characterized in that the shape of the resin substrate is plate-form, sheet-like, woven fabric-like, nonwoven fabric-like, resin-containing reinforced fabric-like or tubular.

18. (Currently amended) A method for preparing the metallic plate and the resin structure laminated with a photocatalyst-supporting film according to Claim 1 characterized in that the laminated metallic plate or the resin structure is prepared ~~firstly~~ by the steps comprising

(a) coating a polymer resin film with a coating solution for comprising an adhesive layer wherein and a silane coupler as a hardener is added onto a polymer resin film and then drying it to form an adhesive layer and

(b) subsequently coating the adhesive layer with a coating solution for comprising a photocatalyst layer onto the adhesive layer and then drying it the coating solution to prepare a photocatalyst-supporting film which carries the photocatalyst layer on the polymer resin film via the adhesive layer, and

(c) then laminating the photocatalyst-supporting film onto the surface of a metallic plate or a resin substrate by applying heating and pressing.

19. (Currently amended) Reflection plates for lighting equipments, outdoor-use signboards and other signs, home-use electric appliances, guardrails and road signs using ~~either~~ comprising the metallic plate or the resin structure laminated with a photocatalyst-supporting film according to Claim 1 ~~at least for the part of them.~~

20. (Currently amended) Outdoor-use signboards and other signs, telephone box, materials for outdoor tents, washstands, modular bathes, systematic kitchens, water tanks for ornamental fishes, plastic cases, wall papers, food-use trays, and packaging films using the resin structure laminated with a photocatalyst-supporting film according to Claim 1 ~~at least for the part of them.~~

21. (Original claim) A coating agent for adhering a photocatalyst for preparing a photocatalyst layer onto a polymer resin film via an adhesive layer characterized in that the coating agent is prepared by adding a silane coupler in an amount of 0.1-5% by weight relative to the weight of a coating solution for the adhesive layer as a hardening agent into the coating solution for an adhesive layer containing 2-20% by weight of silicon denaturated resin, which contains either polysiloxane in an amount of 10-50% by weight or colloidal silica in an amount of 5-30% by weight.

22. (Original Claim) A coating agent for adhering a photocatalyst for preparing a photocatalyst layer onto a polymer resin film via an adhesive layer characterized in that the coating agent is prepared by adding a silane coupler in an amount of 0.1-5% by weight relative to the weight of a coating solution for an adhesive layer as a hardener into the coating solution for

an adhesive layer containing either monoalkyltrimethoxysilane or its hydrolyzed product, polysiloxane, in an amount of 1-10% by weight and silica sol in an amount of 0.1-5%.